

### 3.6 Rivers and Streams Industrial Designated Use Assessment

**Surface Water Goal:** Our surface waters (tidal and non-tidal) will support human and ecosystem health and applicable uses such as recreation, fishing, drinking water supply, agriculture and industry.

An industrial water supply designated use support assessment would evaluate attainment of the Surface Water Quality Standards (SWQS) provision for the protection of waters used for processing or cooling. (N.J.A.C. 7:9B) This is the first designated use assessment for industrial water supplies in a New Jersey Water Quality Inventory Report. Since the SWQS are protective of the most sensitive use, meeting the SWQS for aquatic life and human health should ensure protection of the waterbody for industrial water supply. In addition, water quality needs of industry may vary significantly.

#### 3.6.1 Rivers and Streams Industrial Designated Use Assessment Method

The industrial designated use assessment methodology was derived by comparing those stressors which may effect industrial use of surface water with the SWQSs. For this assessment, pH and total suspended solids (TSS) were used.

EPA Guidance for the Preparation of Water Quality Inventory Reports recommends that states consider the percent of samples exceeding applicable SWQS assess designated use attainment. (EPA, 1997). The SWQS and monitoring program are summarized in Part III, Chapter 3.1; data are summarized in Part III, Section 3.1.3 and Table A3.1.3-4 in the Appendix. Monitoring data collected between 1995-1997 were used for this assessment, thus the assessment is based on monitored data. The assessment method for industrial water supply is shown on Table 3.6.1-1.

Table 3.6.1-1: Industrial Water Supply Assessment Method for Rivers and Streams	
<b>Full Support</b>	Less than or equal to 10% of samples for pH or TSS exceed the SWQSs.
<b>Full Support but Threatened</b>	Less than or equal to 10% of samples for pH or TSS exceed the SWQSs but rising concentrations of pH or TSS indicate full support will not be met within the next 2 years.
<b>Partial Support</b>	Greater than 10 % of samples for pH or TSS exceed the SWQSs.
<b>No Support</b>	Termination of use as an industrial water supply.
<b>Notes:</b> Use 1995-97 data summaries from WQ Indicators Project Water quality data were compared to applicable NJ Surface Water Quality Standards (N.J.A.C. 7:9B) described in Section 3.1.1.	

**Spatial Extent of Assessment:** This assessment was based on data collected at 76 of 81 ASMN stations. The 5 Delaware River mainstem stations were not included because the Delaware River Basin Commission (DRBC) assesses this waterbody. (DRBC, 2000)

In previous New Jersey Water Quality Inventory Reports, each station was assumed to represent 5 miles of stream. For this assessment, each station was assumed to represent the stream reach

that was monitored. Stream reaches have been defined by USEPA in the Reach File 3 system, which can be used on GIS. Reach File 3 (RF3) was mapped at a moderate 1:100,000 scale. Using RF3, the 76 ASMN stations represent 176.4 of 6420 (2.7%) river miles. The RF3 reach identification number and reach length are provided in Table A3.1.2-1 in the Appendix. Use RF3 was considered an intermediate approach to the more refined spatial assessment that will be provided by the redesigned ASMN.

It is important to note that the monitoring design used to collect these data does not support extrapolating the assessment results to locations or streams that were not monitored. Streams that appeared to have the greatest impacts were prioritized in this network.

### 3.6.2 Rivers and Streams Industrial Designated Use Assessment Results

**Industrial Designated Use Assessment - pH:** As discussed in Part III, Section 3.1.3, 54 of the stations (71.1%) sampled for pH exceeded the criteria in less than 10% of the samples. See Figure A3.6.2-1 in the Appendix. Thus the waterbodies associated with these stations were determined to be fully supporting industrial uses. Since the SWQSs are protective of the most sensitive use, meeting the SWQS for aquatic life should ensure protection of the waterbody for industrial water supply. There were 22 stations that exceeded the criteria in more than 10% of the samples and are assessed as partially supporting industrial use. There were no known areas where a water supply was determined to be unsuitable for industrial use.

<b>Table 3.6.2-1 Industrial Water Supply Designated Use Assessment (pH)</b>		
<b>Assessment</b>	<b>Stations</b>	<b>River Miles</b>
Full Support	54	114.44
Partial Support	22	61.94
Non-Support	0	0.0
Total	76	176.38

**Total suspended solids (TSS):** TSS criteria were established in the NJ SWQS to protect aquatic life from excessive sedimentation. As discussed in Part III, Section 3.1.3, relatively little TSS data were available for 1995 to 1997. Results are summarized on Table 3.6.2-2 below.

<b>Table 3.6.2-2 Industrial Water Supply Designated Use Assessment (TSS)</b>		
<b>Assessment</b>	<b>Stations</b>	<b>River Miles</b>
Full Support	5	3.46
Partial Support	3	5.74
Non-Support	0	0.0
Total	8	9.20

### 3.6.3 Source and Cause Assessment

The reader is referred to Part III, Section 3.1.4 for this source and cause assessment.

#### **3.6.4 Maintaining and Improving Industrial Use Assessment**

Clarify needed water quality: The pH and TSS assessment provided here represents the Department's first attempt to assess industrial uses. As discussed previously, needs of industrial water users may vary significantly. In addition, the ambient stream monitoring network is not designed to assess water quality at industrial intakes. Industrial users may have additional data regarding water quality and use attainment relevant to their intakes. Comments from industrial users are sought to improve this assessment.

Address identified exceedences of SWQS: As discussed in Part III, Section 3.1.4, waterbodies with exceedences of SWQS criteria are included on the 1998 Impaired Waterbodies List and will remain on future lists until new data show compliance with the applicable criteria. These waterbodies are subject to the provisions and schedule in the TMDL MOA (See Part II, Appendix A2.5-1). As TMDLs are planned, developed and implemented, cause(s) of exceedences will be identified and managed.